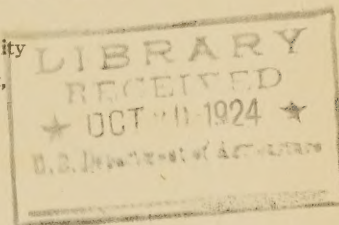


1.9
Ex 892 EF

THE EXTENSION PATHOLOGIST

"To promote economic crop production, improve the quality of the products, and prevent wastage in storage, transit, and at the market."



Issued by

THE OFFICE OF COOPERATIVE EXTENSION WORK

AND

BUREAU OF PLANT INDUSTRY

COOPERATING

UNITED STATES DEPARTMENT OF AGRICULTURE

VOLUME 2.

NUMBER 9

SEPTEMBER, 1924.

The material contained herein is not for publication except by permission from the Office of Cooperative Extension Work, United States Department of Agriculture, Washington, D. C.

THE EXTENSION PATHOLOGIST

Volume 2.

Number 9.

Contents of this issue.

	<u>Page</u>
Extension schools	84
Schools, institutes, and field meetings as agencies in extending plant-disease control	85
Demonstration schools in New York	85
Notes from North Carolina on tobacco seed-treatment demonstrations at vocational schools	86
Plant pathology and the institute in Iowa.....	87
Institutes, demonstration trucks, cars, and trains in Kansas	88
Association meetings in Maryland	88
Institutes, farmers' weeks, and field meetings in Washington	89
Citrus field meetings in Florida	89
More about the farmers' tour	90
News from the States	91
Extension literature	96

THE EXTENSION LITERATURE

Table 2.

Table 2.

Table of Contents

Page

54	Extension schools
55	Schools, institutions, and field stations engaged in extending plant-disease control
57	Extension schools in New York
60	Notes from North Carolina on tobacco seed-treatment demonstrations at agricultural schools
67	Plant pathology and the Institute in Iowa
74	Institute, demonstration grounds, etc., and station in Kansas
82	Demonstration meetings in Maryland
87	Institute, farmers' groups, and field meetings in Washington
89	State field meetings in Florida
90	Notes about the Institute tour
94	Notes from the States
95	Extension literature

EXTENSION SCHOOLS.

By A. B. Graham, In Charge, Division of
Subject-Matter Specialists, Office of
Cooperative Extension Work, Washington, D.C.

Extension schools of the most recent type cover a period of about two days, in which a special subject is discussed in its various phases by two or more persons. Location of the school is usually determined by the county agent in conference with the specialist whose line of work is to be taken up. The school presents an opportunity for mass instruction by means of brief lectures and demonstrations. The equipment may include a cloth blackboard, a large sheet of wrapping paper, some crayon or charcoal, specimens of diseased plants brought from institutions and others of a similar nature collected locally, several well-made charts, lantern-slide material, and perhaps a movie outfit.

An extension school lecturer might well keep in mind the words of a famous divine to a young minister in answer to an inquiry with regard to how long a sermon should be: "Young man, preach as long as you like, but remember that not many souls are saved after the first twenty minutes." This remark has been found to apply very well to radio lecturers.

The demonstrations may be of two types. The first is the table demonstration where the process of mixing materials may be demonstrated in miniature and their behavior observed. The second includes manipulatory processes and is usually conducted out-of-doors, the weather permitting. The members of the school participate in the operations. The object of the manipulatory process is to leave a number of persons in the community who can carry on the whole process of plant disease control.

The extension school may be held for leaders in various communities who come in for training with the view of returning to their communities and teaching others. Extension schools give an opportunity for the specialist to organize his work in cooperation with the county agent to cover a distinct territory within the county. They also furnish a clearing house for those who come to report their difficulties and exchange observations and experiences, all of which are beneficial to the plant disease specialist.

Keep in mind:- A person's eyes may be turned toward the speaker for courtesy's sake, not attention; light in a dark corner at an evening meeting is an antidote for noise and undertone talking; shoot a question at the person who persistently carries on a little side discussion; manage an audience by doing a little seat arranging yourself; sunshine in the eyes of listeners is not conducive to attention; the person who can't see, can't hear; chalk and talk.

SCHOOLS, INSTITUTES, AND FIELD MEETINGS AS AGENCIES
IN EXTENDING PLANT-DISEASE CONTROL.

In our last number some idea was given of the way in which the extension pathologists are using the farmers' tour as an agency for teaching methods of plant disease control. About the time I was assembling the information which appeared in this issue, some statistics prepared by the Section of Reports and Efficiency Studies, Office of Cooperative Extension Work, were brought to my attention; and I learned that in 1923 county agents reported assisting with 5,564 farmers' institutes which were attended by 1,176,300 farmers. During that same year there were held throughout the country more than 4,400 extension schools with an attendance of approximately 484,875 farmers. Being interested to know in what way the plant pathologists were using these agencies, I sent out a questionnaire on this topic to 18 States. Unfortunately, a number of the men addressed were enjoying a vacation period so that the responses received were not as numerous as had been hoped for. Nevertheless, coming as they do from different sections of the country, these notes give a fairly good cross section of this phase of the work. F.C.M.

Demonstration Schools in New York.

During the winter months, our most important type of extension teaching is done through demonstration schools. They are held only in communities where such teaching has been requested and where thirty or more farmers or their wives have signed pledges to attend and have paid their tuition fee of \$1. These signatures are usually obtained by some local committee man, high-school teacher, minister, or other person interested in better agriculture. The county agent then arranges the place of meeting, the time, and with the aid of the subject-matter specialists, outlines a program for the school. In addition, he advertises the school by circular letters, posters, news articles, and by telephone calls.

The sessions may continue for three or five days depending upon whether a specific subject, as "Potato Improvement" or "Fruit Spraying" is requested or a more general program is required. Two departments of the college usually take part at each demonstration school. When plant pathology is engaged for this work, a cooperating department is selected to give a subject closely allied to plant disease. In former years, such nonrelated subjects as poultry, dairy, or livestock were combined with plant pathology. This practice proved detrimental to good teaching and has now been discontinued.

The instructor in pathology takes with him a microscope, prepared slides, preserved materials, charts, blackboard, mimeographed outlines, and any other help that may be available. The college sends bulletins and leaflets on the subject to be discussed, and supplies the pupils with notebooks. The farmers are requested to bring any fresh specimens in which they are interested.

The program each day consists of two lectures or recitations in the forenoon - one by each subject-matter specialist - and two in the afternoon. At the beginning of each period the pupils are drilled by questions and discussions in the matter presented previously.

The hours for convening and dismissal are arranged by the members the first day and are then closely adhered to during the remainder of the school. The senior instructor calls the roll twice a day and keeps a record of attendance. He also records the ages of the members, the sizes of their farms, the crops in which they are interested, and the problems which they think need solving. At the close of the meeting he writes a brief report enumerating the good and bad parts of the school, telling where it might be improved and the results which apparently were obtained.

The demonstration school is one of the most important means during the winter of teaching the farmer the reality of disease-producing organisms, supplying the motive for reading bulletins on agriculture, and helping him to obtain a new vision of better farming. In many places where schools are held, the results show an almost immediate improvement of the crop under discussion.

CHARLES CHUPP.

Notes from North Carolina on Tobacco Seed-Treatment
Demonstrations at Vocational Schools.

During February of this year, a tobacco seed-treatment campaign was conducted in four counties in North Carolina, with the vocational agricultural schools serving as convenient meeting points. The demonstrations were held indoors in order to have farmers in attendance grouped in a meeting hall and also because of the cold weather in February. The meetings were advertised through the schools several days in advance. In some instances, the suggestion was made that those interested bring their seed along for treatment. The meetings aroused a surprising amount of interest, and all demonstrations averaged an attendance of more than 40 farmers each. Before seed treatment was begun, the means of control was discussed, and specimens of the various diseases were passed among those in attendance. In some instances, farmers bringing seed helped with the

treatment, since several buckets and tubs were provided around which a group could be gathered for washing seed. Special attention was paid to washing out the formaldehyde in order to prevent injury. Eight days were spent at this work during which time seed were treated for about 300 farms. In addition, many farmers stated their intention of treating their own seed before planting.

G. W. FANT.

Plant Pathology and the Institute in Iowa.

Farmers' institutes are very popular in Iowa, particularly during the winter months. There is a slack time of the year then; and these institutes have, in most cases, been held in connection with corn shows, since so many counties hold local corn shows from December to March. These are held, chiefly, under the auspices of the local farm bureau.

Due to this joining of corn show and institute, corn is the main topic of discussion. A large number of the counties have conducted county corn-yield test plots, and the results are made public at this time. Several counties conduct corn-disease test plots each year, and these serve to attract county-wide attention. Last year there were 9 of these test plots; and institutes with corn shows were held in these counties during the winter, at which time it was my privilege to discuss corn diseases in general and present the results of the disease test plots of the county and State.

There has been more interest aroused over corn diseases during the past three years than ever before, as is evidenced by the fact that this fall we are harvesting 16 disease test plots in the State. Farmers who thought that corn was immune to serious disease have been forced to admit, only recently, that the control of corn diseases is one of the first essentials in raising corn profitably.

We have found the institutes to be extremely interesting and feel that they are worth while. They are only another avenue for the dissemination of timely information. While we are strong believers in the actual field demonstration as a substitute for the lecture type of extension teaching, nevertheless we believe the farmers' institute has a place among the methods of broadcasting plant pathological information.

DONALD PORTER.

Institutes, Demonstration Trucks, Cars, and
Trains in Kansas.

It is my opinion that institutes as a whole are not very satisfactory unless some plot work has been done in the community in which they are held.

Trucks, cars, and trains are especially successful because they allow us to carry exhibits which make the work interesting and easy to put across. Briefly, I would class the whole matter under one heading and say that they are successful and can be used to advantage where we have had demonstrational plots to prove to the growers the value of one or more practices in plant-disease control. Then the growers will be ready for institutes and extension schools.

E. A. STOKDYK.

Association Meetings in Maryland.

Since the organization of the local farm bureaus, institutes have been discontinued in Maryland. In their place we are using the meetings of the farm bureaus as agencies to promote plant-disease control. As a part of our potato-disease control program in Worcester County, I gave a talk on the control of potato diseases at a series of 10 local farm-bureau meetings during January and February with a total attendance of 709. In connection with these talks, the film, "Hidden Foes in Seed Potatoes," was shown. A great deal of interest was evidenced at these meetings, and many questions were asked by potato growers. We feel that these meetings assisted materially in stimulating interest in the control of potato diseases. Talks on other subjects, such as control of tobacco wildfire, control of corn root rot, and control of truck-crop diseases were given at various local farm-bureau meetings.

R. A. JEHL.

Institutes, Farmers' Weeks, and Field Meetings
in Washington.

Farmers' institutes and farmers' weeks as a means of spreading work in extension pathology are obsolete in our State. I gave only one extension school last year. This school was of one day's duration. We found that at Duvall, King County, considerable interest in potato growing was manifest; and Mr. Henry, the county agent, and myself arranged for a one-day school. In the morning I emphasized seed treatment of potatoes and the selection of seed. In the afternoon virus diseases were discussed. There was a very good attendance for the community, and much interest was shown. As a result of these meetings, a potato association was organized in Duvall Valley.

This last July we tried a new kind of tour in Kitsap County. Instead of having all the people gather at one point, the county agent scheduled us to be at certain points at certain times and the people in the respective communities gathered at the central point. This meant that I had just a few people to handle at any one time. I could then take them out into potato patches and give them practically individual attention in the identification of mosaic, leaf roll, and kindred diseases. It is difficult to handle a big crowd on a potato-disease tour, especially when none of the men understand the nature of the diseases in question. I do not want to have over 30 people with me at once.

G. L. ZUNDEL.

Citrus Field Meetings in Florida.

Field meetings were held in practically every citrus producing county during the past summer. In these meetings fruit growers were instructed in when and where to look for citrus diseases, how to recognize them, the damage done, and the best methods of control. Microscopes and binoculars were used extensively in the studying of mounted and fresh specimens in every meeting. An effort was made, which I believe was successful, to familiarize the growers with the diseases and their control from a purely practical standpoint. Lectures were given, tours made through the groves to observe conditions, and demonstrations conducted in the methods of control.

I must say that these meetings were well attended, and much interest was manifested in the subjects as they were presented. It is interesting to note that, where meetings were held a second and third time at the same place, the attendance had almost doubled from year to year. This would lead us to believe that the field meeting is one of the best agencies or means for teaching the growers what they should know about plant-disease control. Many of these meetings were followed up by timely articles going a little more fully into some of the subjects discussed and keeping important matters before the minds of the growers.

E. F. DE BUSK.

MORE ABOUT THE FARMERS' TOUR.

Excerpt from a Letter written in
Washington, August 14.

During the last three days we have been holding a potato tour throughout Kitsap County. The county agent outlining the tour advertised that we would be at certain points at certain times, and the neighbors in each community collected at the specified time to go over the demonstration plots as well as visit various other potato fields in the community.

A short meeting preceded visits to the field at which the nature of mosaic and various virus diseases was explained. We then took the farmers through the field and pointed out the diseases, putting emphasis upon mosaic. After explaining to them how to detect diseases, we asked them to go through the field and point out the different diseases. I always make an effort to give an examination as we go along. I do this by walking up to a certain plant and asking a farmer what the trouble is and how to prevent it.

Last spring County Agent Worden of Kitsap County endeavored to place a carload of certified seed in his county. He was not successful, however, but did succeed in getting about 3,000 pounds placed. As a result of the tour which we have just held, two of the leading potato growers asked the county agent to procure for each of them a ton of good seed potatoes next spring, and I am sure that the season of 1925 will see a large amount of good seed potatoes planted in Kitsap County.

On August 9 County Agent Smith and I held a tour in Snohomish County. We worked the plan in the same way as in Kitsap County. Some of the leading potato growers in Snohomish County will obtain good seed for their own use next year.

G. L. ZUNDEL.

NEWS FROM THE STATES.

Florida: Citrus Disease Control.

My time has been devoted largely to the control of melanose, blue mold decay, and scab, the three most important diseases of citrus fruit in Florida. In the control of melanose and scab, spraying demonstrations have been conducted in cooperation with county agents and growers in almost every citrus producing county in the State. While it is too early to estimate the results of this work, recent inspection leads us to believe that we have been fairly successful in the control of these diseases where the spraying was done properly and at the right time. In efforts at scab control, with the exception of a few instances where liquid lime sulphur was used, 3-3-50 Bordeaux plus 1 per cent oil has been used in spraying. We are making an effort this year to obtain rather complete records of the cost of spraying with the view of determining the profits derived from such operations under various conditions. It is believed that the growers have been wasting money in spraying for the control of these diseases under certain grove conditions. In fact, with the present market situation, we are forced to consider the economical phase of every grove operation, of which spraying constitutes a large part.

In my work in blue mold decay control much time has been devoted to correcting faulty methods of handling the citrus fruit from the tree to the packing house. It seems that about the only thing we can do in the control of blue mold decay is to encourage more careful handling of the fruit. This requires time and constant effort in educating picking foremen, pickers, and in fact, all who have to do with the handling of the fruit. It seems that the matter has gone so long without attention that it requires special effort to impress those concerned in the handling of our fruit with the importance of handling it in such a way as to reduce mechanical injuries to a minimum. You perhaps already know that the largest shipping organization in the State has adopted, beginning with this shipping season, shipping-point inspection of all fruit handled. This is a big step toward improving the methods of handling our fruit and, consequently, toward control of blue mold decay.

E. F. DE BUSK.

Notes on Trucking.

Land is being prepared for the next potato crop.

Seed beds of celery, pepper, tomato, and eggplant are well advanced and have been systematically sprayed for disease and insect control.

Winter crops are being planted in the trucking sections.

Truckers are demanding and obtaining better seed. Seed disinfecting with corrosive sublimate for disease control is being practiced extensively.

J. R. SPRINGER.

Maryland: Spraying and Dusting.

The results of cantaloupe dusting and spraying demonstrations which we have been conducting during the past three years were very evident. This was especially true in Wicomico County where practically no cantaloupes were dusted or sprayed except in our demonstration plots. This year a large number of growers who dusted their vines had little or no blight and an increased yield of high-quality fruit. Most of the untreated vines were severely blighted causing a reduction in yield and quality. The number of growers who sprayed and dusted their vines in Dorchester and Caroline Counties was also greater than during previous years.

R. A. JEHLE.

Minnesota: Machines for Treating Cereals and Seed Potatoes.

Mr. E. D. Askegaard, a potato grower living near Moorhead, Minn., has invented and patented a machine for treating seed potatoes by the hot-formaldehyde method. The machine has a large insulated tank which is heated by gasoline burners and will treat 4 bushels at one time. The tank has a special clock which rings when the potatoes have been in the solution two minutes and times each lot from the time it is placed in the tank. The machine has been used during the past year in the Red River Valley, and the results have been quite satisfactory. Several large manufacturing companies are considering the machine from a commercial angle.

The Splittstoser Company of North Branch, Minn., has invented a new machine for treating seed grain by the copper carbonate dust method. The machine consists of a hopper at one end where the grain is put into the machine and is carried thru by means of a number of cups revolving on an axis in the center. Each cup is tilted so as to stir up the grain and carry it to the opposite end of the closed chamber where it goes into the sacks. The dust is placed in a revolving drum, which is located on the inside of the closed chamber. At each revolution a small amount of the dust is added to the grain, which is better distributed as it is stirred up by the revolving cups. This machine was used on a number of farms this past season and seemed to cover the grain with dust in a very thorough manner.

R. C. ROSE.

New York: Orchard Disease Control.

Many county-wide fruit tours were held in August. Spraying and dusting demonstrations and many points of interest were visited in connection with the application of the recommendations of the spray information service. The average attendance on these tours was between 50 and 60 people. The subjects of discussion of most interest to the growers were apple scab, rosy aphid, codling moth, and the merits of dust vs. spray in the control of orchard insects and diseases.

Epidemics of rosy aphid and apple scab this year have emphasized to the growers probably more than for some years the importance of thoroughness and timeliness in the applications. In the ordinary season one application between the delayed dormant and calyx applications has proved sufficient; but this year, because of the character of the weather, some of the field assistants advised two applications, e.g. pre-pink and pink, for the prevention of primary infections of apple scab occurring in this period.

E. F. GURA.

Wisconsin: Adverse Weather Injures Crops.

Wisconsin crops of 1924 have suffered more from environment than any specific disease. Lowlands were flooded several times with consequent loss to crops. Half of the cabbage demonstrations at Racine were completely drowned out.

An intensive and extensive pea disease survey was made during the canning season. Root rot due to aphanomyces sp. was present in a number of fields. The losses caused by this parasite were difficult to separate from those caused by aphids or heavy rains. Several companies found the soil so saturated with water that no harvesting machinery could be used; hence the vines were cut with scythes, a slow and expensive method not conducive to fancy quality. The pea canners are looking forward to another extension school this coming winter and later hope to have farmer group meetings in their home towns. At these meetings questions on pea diseases, aphids, and inoculation will be discussed.

Corn is very backward and has more smut and rust than usual, except on the sandy soils where it will be above the average.

Potatoes have been injured by heavy rains except in the Barron County section. Late blight has been absent except in a few limited fields. A heavy infection was expected because of the rains, but evidently it was held in check by the low temperatures. Spray vs. dust demonstrations were held in connection with the Wisconsin potato tour. The dust is becoming more and more popular, although specific results are inconclusive.

R. E. VAUGHAN.

Washington: Potato-Disease Control Activities Successful.

During my five years of extension work with potatoes I have never seen greater interest manifested than we have had this past summer. In Spokane County the county agent, Mr. Patton, obtained a carload of certified seed and distributed this to about 70 people in 23 communities. This seed was practically all used for demonstrational purposes and was planted side by side with the common seed in each community. As many of the plots as possible were visited by Mr. Patton and me, pictures taken, and a conference held with the cooperator.

In practically every case we found that the use of certified seed paid the farmer two or three times over. As a result of this summer's work in Spokane County, I feel that we will have a greater demand than ever before for good seed. These demonstrations serve to show the people the difference between certified and common seed.

In Kitsap County, the county agent, Mr. Worden, endeavored to get a carload of certified seed last spring, but was only able to get orders for 3,000 pounds. This amount was distributed over the

county to approximately 30 farmers, and recently we had the tour that I spoke of, in which we visited these plots and called in the neighbors. At the end of one of these demonstrations near Poulsbo two of the leading Kitsap County potato growers came to the county agent and wanted him to help them each to find a ton of good certified potatoes next spring.

Similar work with the same results was also carried out in Pierce County and Pacific County. Some of our west-side farmers, after seeing the results of planting common seed for comparison with certified seed, figured out for themselves that it would have paid them to have paid up to \$100 a ton for good first-class seed. In one of our demonstrations in Pacific County we found that of a total of 173 plants from uncertified seed 94 of them or 54.3 per cent, were mosaic; while of 176 plants from certified seed 11 of them, or 6.2 per cent, were mosaic. As a means of further stimulating work next year I am planning to have some potato-disease schools on the west coast early next spring.

The work of eliminating disease has gone so far in Snohomish County that we are planning a disease eradication campaign in that county next year. We will perhaps name it a Pure Potato Seed Campaign, but our main object will be to eliminate mosaic. Some of the leading farmers and bankers of the county are backing the movement and have asked the county agent and me to put this on next year.

GEORGE L. ZUNDEL.

EXTENSION LITERATURE.

Since our last issue the following literature has reached this office from the States:

Arkansas:

Rosen, H.R., A bacterial disease of fox tail. Univ. of Ark. Agr. Exp. Sta. Bul. 193; 66 p. illus. August, 1924.

Iowa:

Durrell, L.W., and Porter, D.R., Dry rots of corn and their control. Iowa St. Col. of Agr. Ext. Bul. 122; 8 p. illus. June; 1924.

Porter, Donald, Canada thistle and quack grass eradication. Iowa St. Col. of Agr. Ext. Bul. 113; 8 p. illus. July, 1924 (Rev.).

Mississippi:

State Plant Board. The quarterly Bulletin, Vol. 4, No. 2; 47 p. illus. July, 1924.

Pennsylvania:

Marble Laboratory, Inc., Canton.
Marble, L.M., Ventilated storage for potatoes.
Marble Laboratory, Inc. 5th report. June, 1924.

Contributions or suggestions with regard to subjects that might profitably be discussed in this news sheet should be addressed to:

Fred C. Meier,
Extension Pathologist,
United States Department of Agriculture,
Washington, D. C.

MEMORANDUM

TO : [illegible]
FROM : [illegible]
SUBJECT : [illegible]

1. [illegible]
2. [illegible]
3. [illegible]

4. [illegible]
5. [illegible]
6. [illegible]

7. [illegible]
8. [illegible]
9. [illegible]

10. [illegible]
11. [illegible]
12. [illegible]

13. [illegible]
14. [illegible]
15. [illegible]

16. [illegible]
17. [illegible]
18. [illegible]

19. [illegible]
20. [illegible]
21. [illegible]